

PRIMUS ENGINEERING
BRITISH MADE

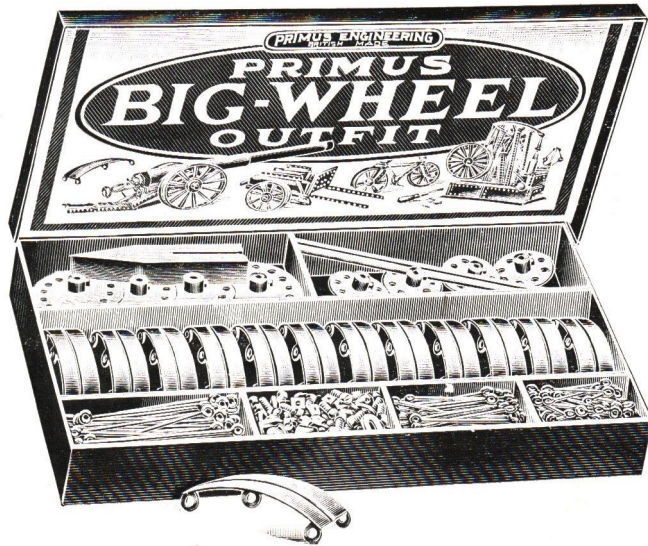
PRIMUS BIG-WHEEL OUTFIT



TCHER & SON, LTD. CAMERA HOUSE, LONDON.

PATENT 34

16.



PRIMUS BIG-WHEEL OUTFIT

CONTENTS

Part No.	Description	Quantity	Part No.	Description	Quantity
150	Wheel Sections - -	24	156	Wire Stays - 3 $\frac{1}{4}$ in.	32
151	8 hole Hub for 4in. Wheel	4	157	Nuts and Bolts - -	72
152	12 " " " 6 " "	2	165	6 $\frac{1}{2}$ in. Axles - -	2
153	16 " " " 8 " "	2	66	Brackets - -	12
154	Wire Stays - 1 $\frac{5}{8}$ in.	32	110	Bending Bolster - -	1
155	" " - 2 $\frac{1}{4}$ " "	48			

COMPLETE WITH INSTRUCTION MANUAL.

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PRIMUS

BIG-WHEEL OUTFIT

Patent No. 3479—1916

A series of new and ingenious parts with which "Primus Engineers" can build up wheels of 4, 6 and 8 in. diameter to be used in connection with many of the models in the Primus Manual or for other special models.

THE Wheels are built up in sections. Three sizes can be made, suitable for Cart Wheels, Fly-Wheels, Pulley-Wheels, Traction-Wheels, Gun-Wheels, Paddle-Wheels, and in fact wheels for all things and anything. Also composite wheels for steam rollers, sectional parts for Towers, Lighthouses and Roundabouts, etc.

These parts are for use with the regular Primus parts, and make the Primus Outfits more varied in its uses than any others that have ever been devised

The Patent Wheel sections themselves are strikingly novel, and as they may be easily bent to any curve or made quite straight, it will be at once evident how useful they will become in making up new models. The Spokes which are of three different sizes may be used as Stays, Supports, Levers, etc., and besides making the models look more like the real thing, they offer a pleasing alternative to the use of perforated strips.

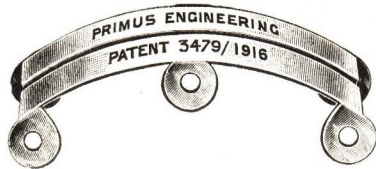
Many new uses will soon be found for the Hubs, either simply or in combination.

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INSTRUCTIONS *for* BUILDING WHEELS

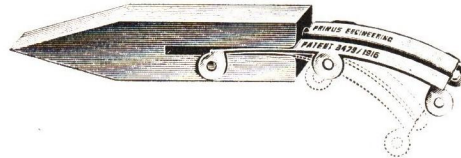
No. 1. FITTING THE RIM SECTION



ON examining the sections carefully it will be observed that the two ends are very slightly different. If you look at a section with the inscription in a proper position for reading, you will see that on the end of the right hand, the pair of lugs are set a trifle wider than those on the left, and on joining up two of the sections the left hand pair of lugs of one section will just fit inside the right hand pair of the others. Great care must be exercised to place each section in its proper relative position to the others.

The patent wheel sections are delivered in the outfits bent to the curve

No. 2. BENDING THE RIM SECTIONS

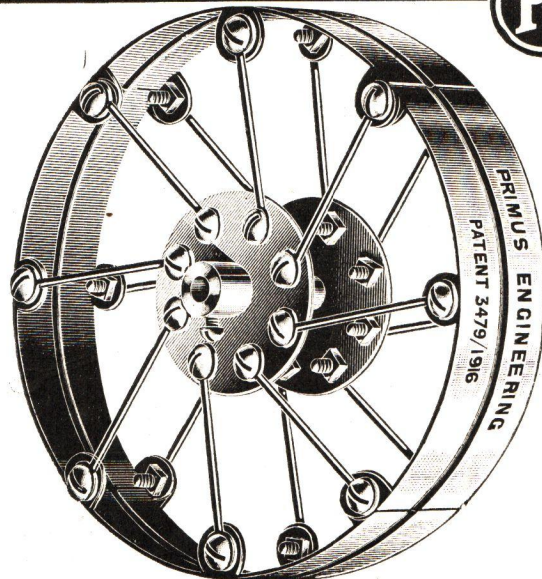


necessary to make four inch or four section Wheels; to adapt to the larger Wheels the curve has to be *slightly* reduced. This must be done by placing the Wheel section in the mouth of Bolster Block and gently bending upwards, then push section further in Block, and repeat until desired alteration in curve is attained. To bring the section back to original curve repeat operations by reversing the action.

On no account attempt to bend them roughly or you will make a sharp kink, which besides being ugly will entirely destroy the symmetry of the section and make it an impossible fit.

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4 IN. DOUBLE HUB WHEEL

No. 3. BUILDING 4 in. DOUBLE HUB WHEELS

THE easiest wheel to commence building is the Double Hub, where the spokes have a rake sideways, without bending them.

In this model the spokes are all screwed on to the Hubs and then the screws are just turned back a little, so as to leave them *loose*, until the wheel is finished. Deal with one side at a time and then finish it.

Then screw one of them to a pair of sections, afterwards screw each alternative spoke to the other pair at the lugs where they join.

The central lugs should be screwed up to the alternative spokes last. Finally all the screws should be tightened up.

In fitting the second series of spokes on Hub see that the "rake" taken by the spokes is in the same direction as the first series.

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No. 4. BUILDING 4 in. SINGLE HUB WHEELS



TO make up the four section single Hub pattern, commence by fixing the spokes on to the Hub in pairs, each pair held on by one bolt and nut. When they are all on if looked at sideways they will present this appearance. See Fig. 1.

Each of the spokes must then be bent slightly outwards to give them sufficient rake to fit the lug on the wheel sections, and they should then appear as nearly as possible like Fig 2.

The spokes can then be easily fitted by taking two of the sections and screwing one eye of a spoke through the lugs that form the joint. Follow up with the remaining sections, and when the fourth is screwed into its place the spokes may be screwed on to the central lug and the whole series will form a perfect wheel, with a channel for a driving band in the centre.

The Wedge end of the Bolster is for spreading open spokes on single Hub Wheels after being bolted on to Hub. Fig. 3.



FIG. 1—SPOKES ATTACHED TO HUB



FIG. 2—READY FOR FIXING TO RIM

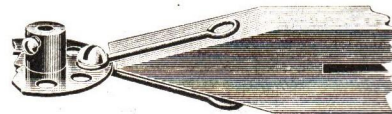
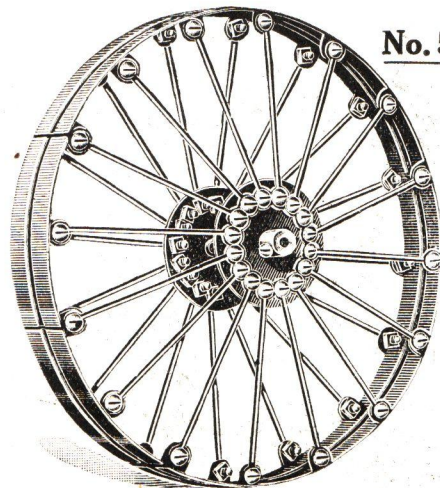


FIG. 3—SPOKES SPREAD BY WEDGE

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No. 5. BUILDING 4, 6 & 8in. STANDARD WHEELS with DOUBLE HUBS



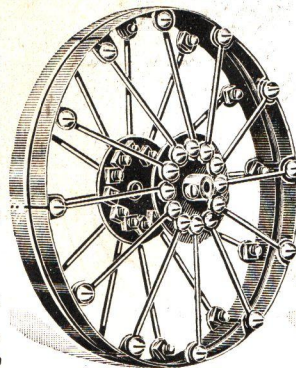
8 IN. WHEEL

This is the Standard form Wheel and suitable for most purposes. After the spokes are screwed to the Hubs, they are given a slight rake by *bending* them inwards, as shown in the drawing, Fig. 4. They will then be found to fit the section perfectly. The wheels have a handsome appearance and are perfectly balanced.

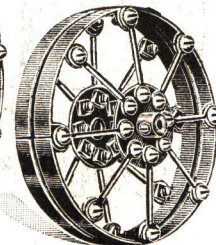
The 6 and 8 inch wheels are built up in exactly the same manner as the smaller one, and once the system is mastered, there is no difficulty.



FIG. 4—SPOKES BENT FOR STANDARD WHEELS



6 IN. WHEEL

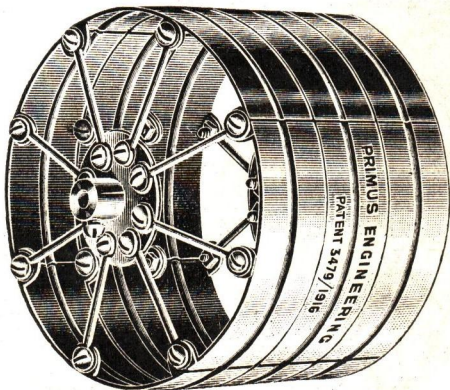


4 IN. WHEEL

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No. 6. BUILDING COMPOSITE WHEELS

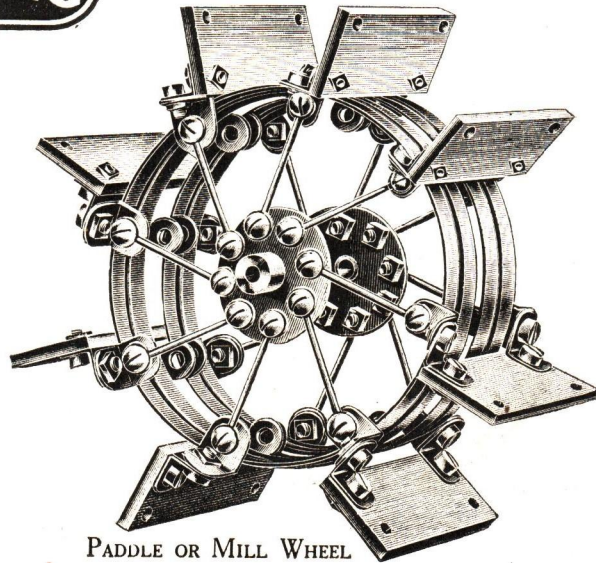


COMPOSITE WHEEL FOR STEAM ROLLER, ETC.

To make composite wheels the same general plan must be followed as for the simple ones.

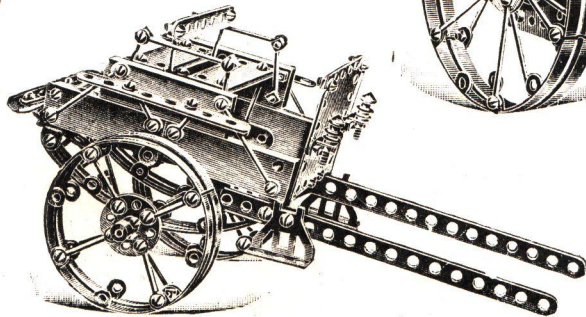
After one of the Hubs with its set of spokes has been fitted to the set of wheel sections on one side only, the side sections should be screwed together, and lastly the second Hub with its set of spokes should be screwed on.

With this plan one side is always open, which makes it more convenient to adjust the screws and nuts.

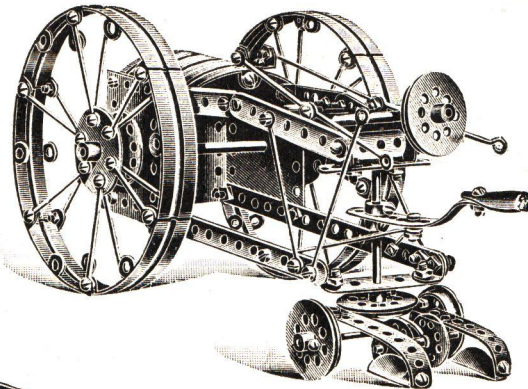


PADDLE OR MILL WHEEL

Models made with **PRIMUS BIG-WHEEL & N° 1** standard outfit

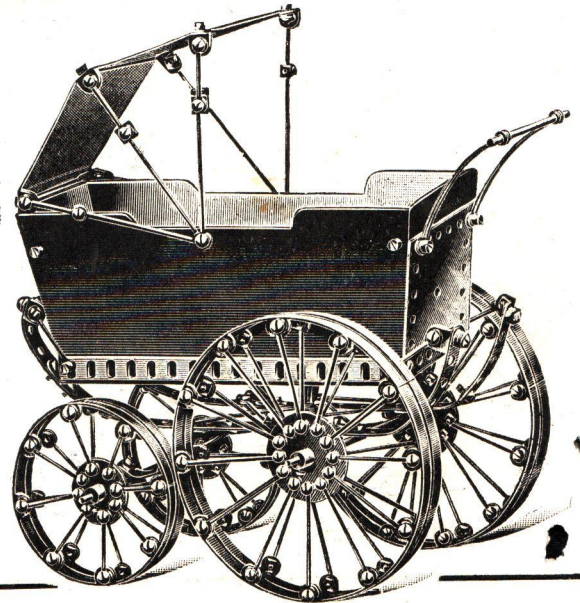


No. 1000—DOG CART

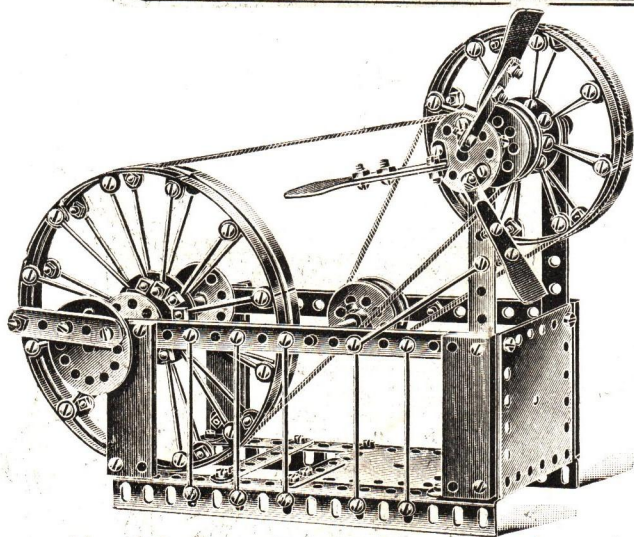


No. 1001—TRACTOR PLOUGH

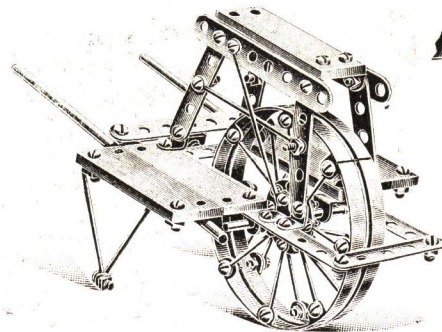
No. 1002—PERAMBULATOR



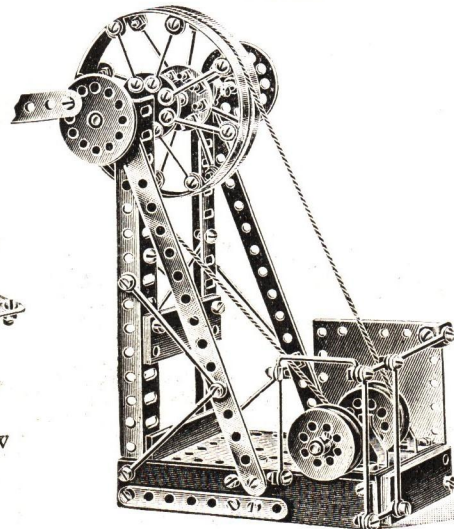
Models made with **PRIMUS BIG-WHEEL & N° 1** standard outfit



No. 1003—POWER DRIVING WHEEL AND FAN

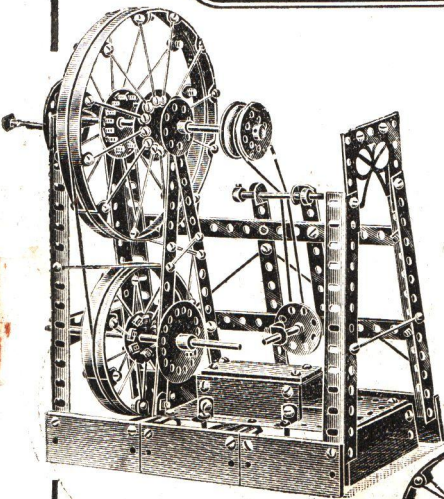


No. 1004—CHINESE LUGGAGE BARROW

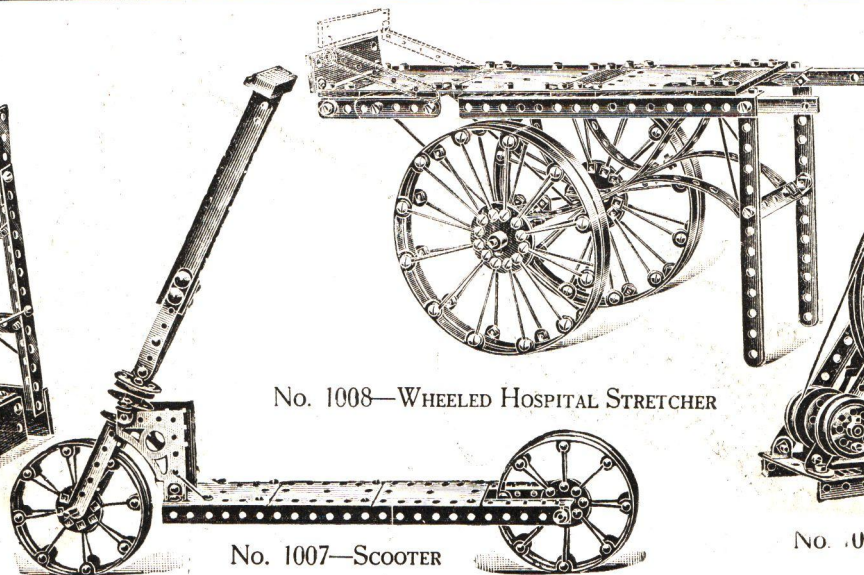


No. 1005—POWER WHEEL AND COUNTER SHAFTING

Models made with **PRIMUS BIG-WHEEL & N° 2** standard outfit

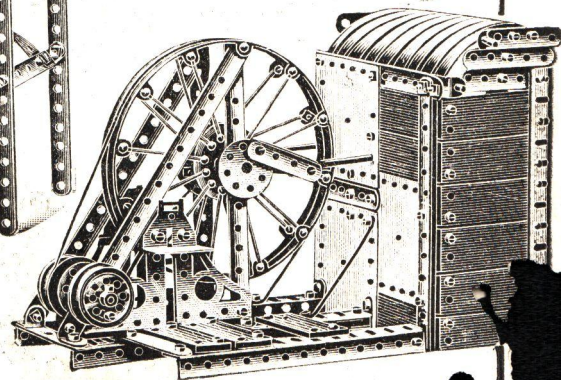


No. 1006—POWER DRILL



No. 1008—WHEELED HOSPITAL STRETCHER

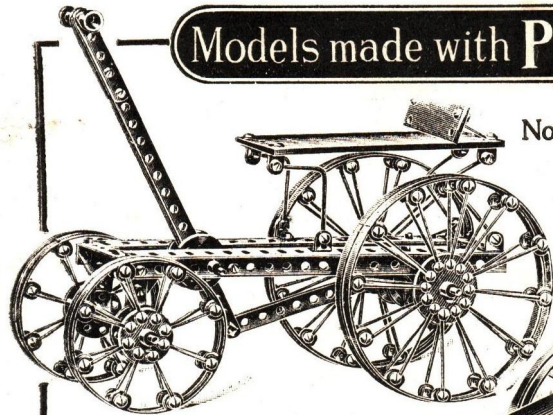
No. 1007—SCOOTER



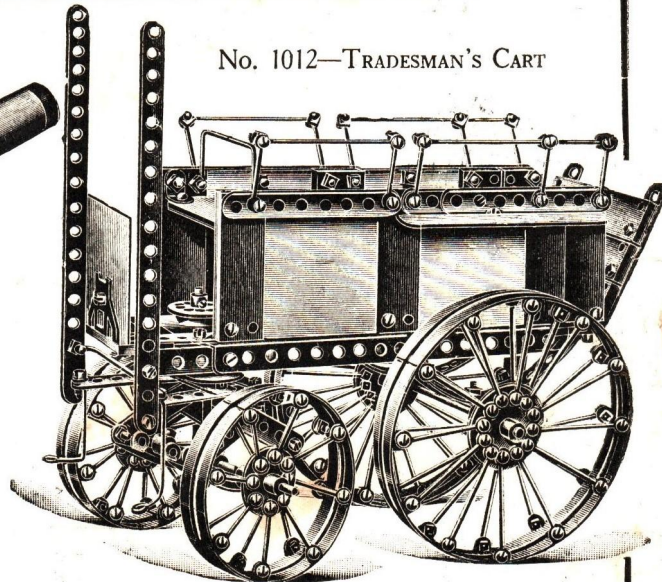
No. 1009—POWER HOUSE AND WHEEL

Models made with **PRIMUS BIG-WHEEL & N° 2** standard outfit

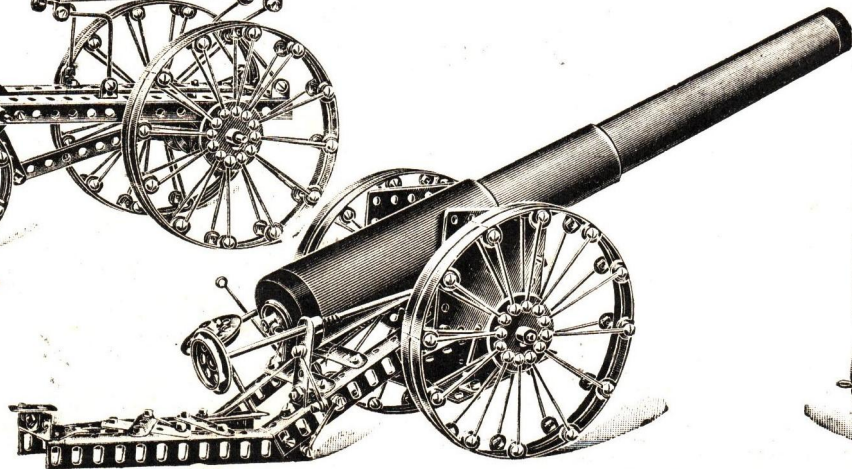
No. 1010—BOYS SCOOTER CART



No. 1012—TRADESMAN'S CART

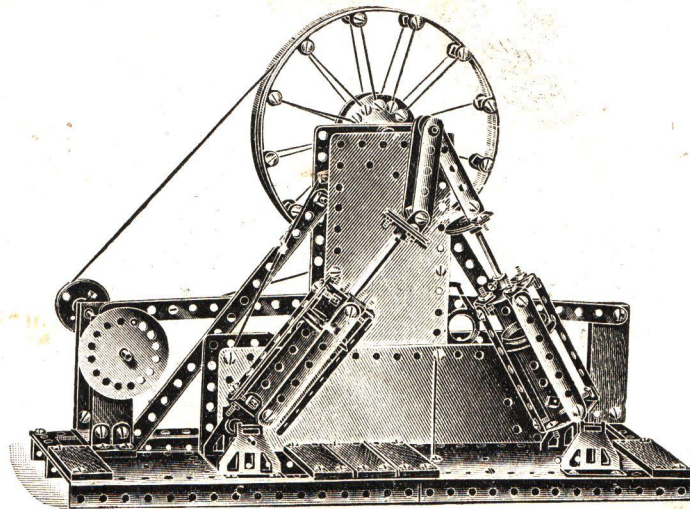
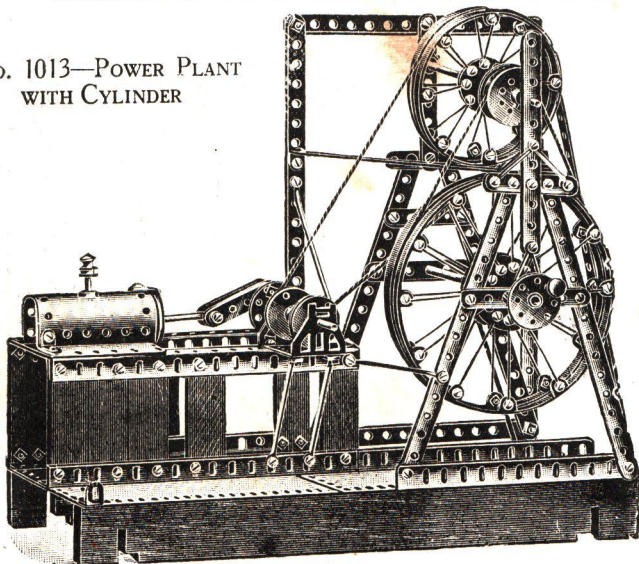


No. 1011—MODEL OF 6IN. QUICK FIRER



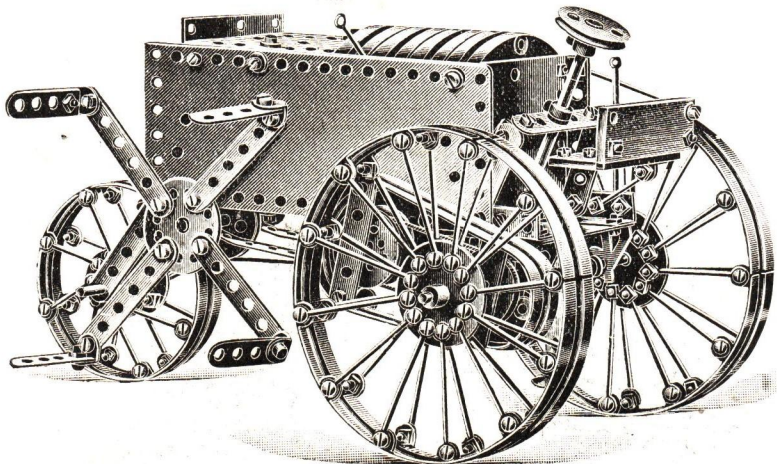
Models made with **PRIMUS BIG-WHEEL & N° 3** standard outfit

No. 1013—POWER PLANT
WITH CYLINDER

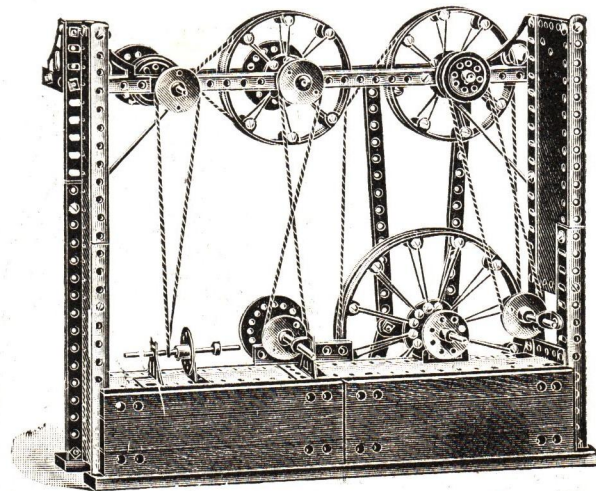


No. 1014—MODEL OF ENGINE WITH TWO
OSCILLATING CYLINDERS

Models made with **PRIMUS BIG-WHEEL & N° 3** standard outfit

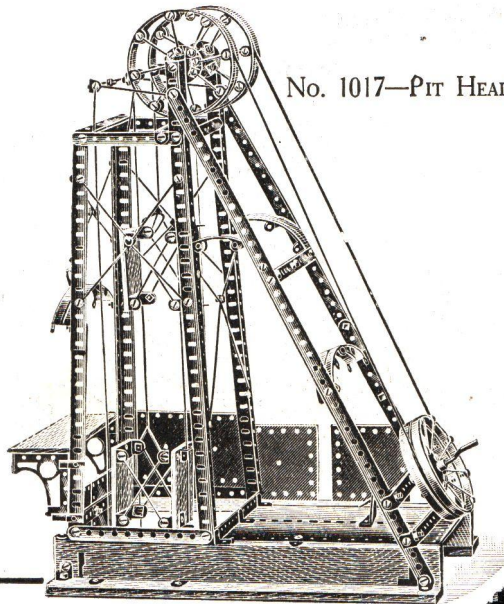


No. 1015—MOTOR REAPING MACHINE

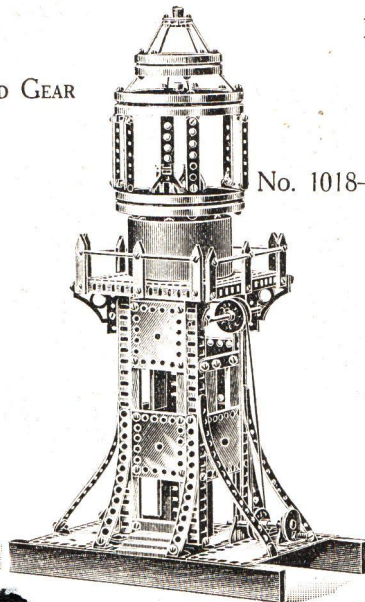


No. 1016—BENCH WITH LATHE AND DRILL—
OVERHEAD PULLEYS

Models made with PRIMUS BIG-WHEEL & N°4 standard outfit

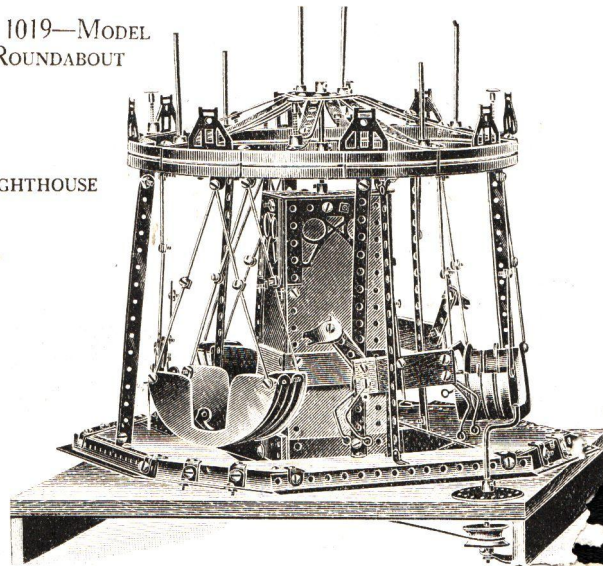


No. 1017—PIT HEAD GEAR

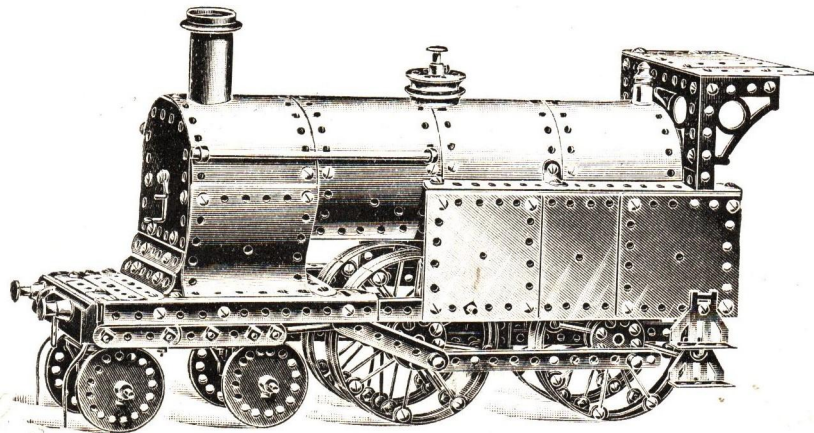


No. 1018—LIGHTHOUSE

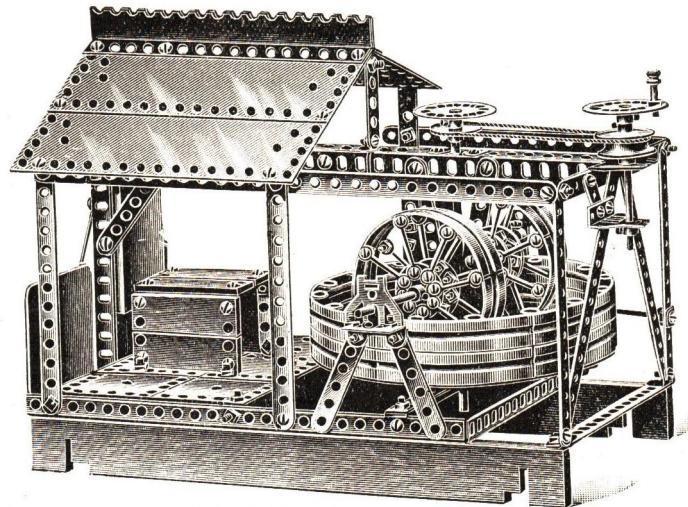
No. 1019—MODEL
ROUNDAABOUT



Models made with **PRIMUS BIG-WHEEL & N°4** standard outfit

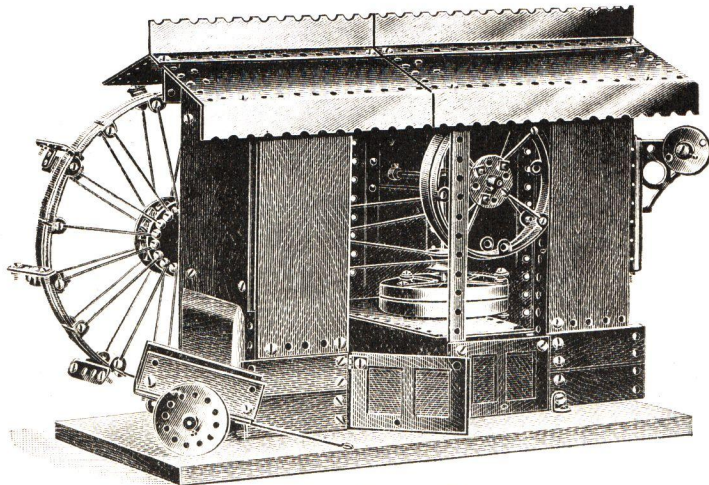


No. 1020—MIDLAND LOCOMOTIVE 4—4—0 TYPE



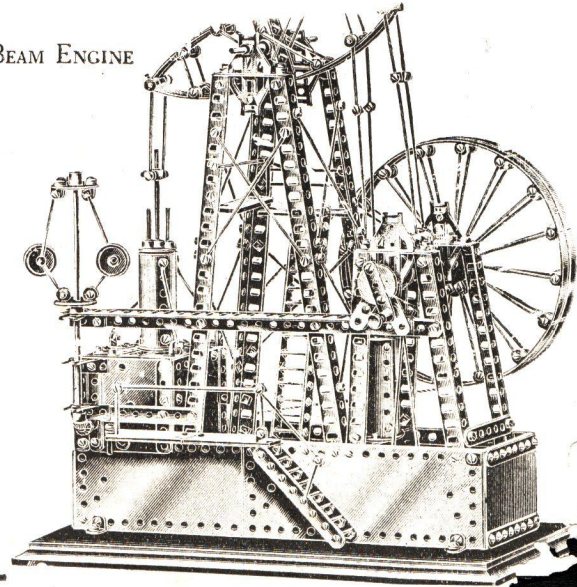
No. 1021—CRUSHING MACHINE

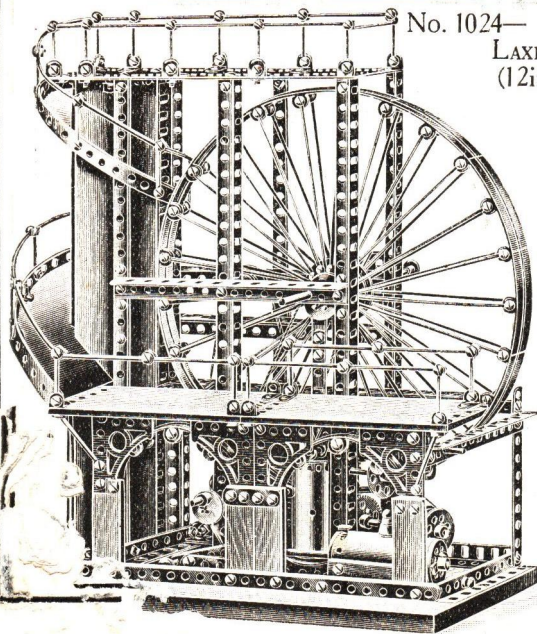
Models made with **PRIMUS BIG-WHEEL & N°5** standard outfit



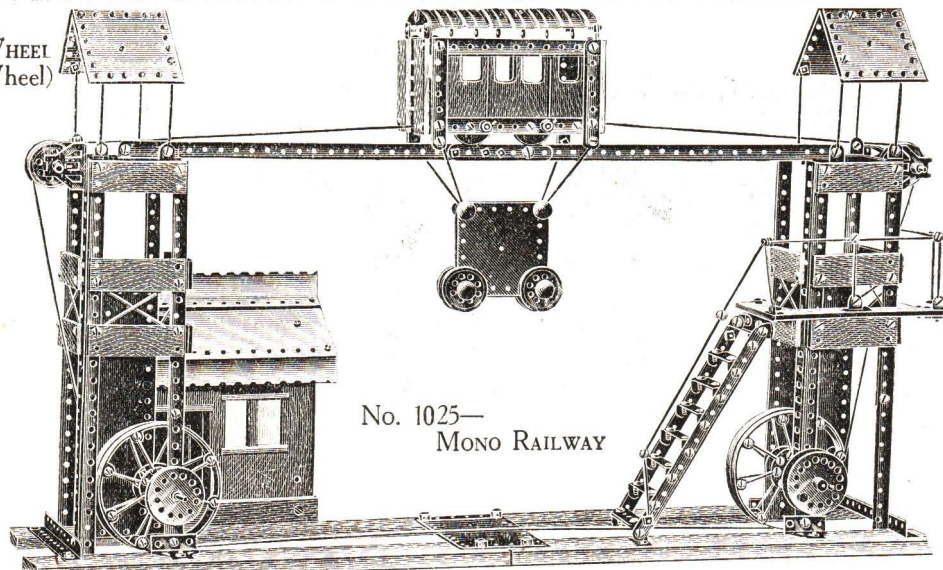
No. 1022—MODEL OF WATER WHEEL WITH
GRINDSTONE, ETC.

No. 1023—BEAM ENGINE



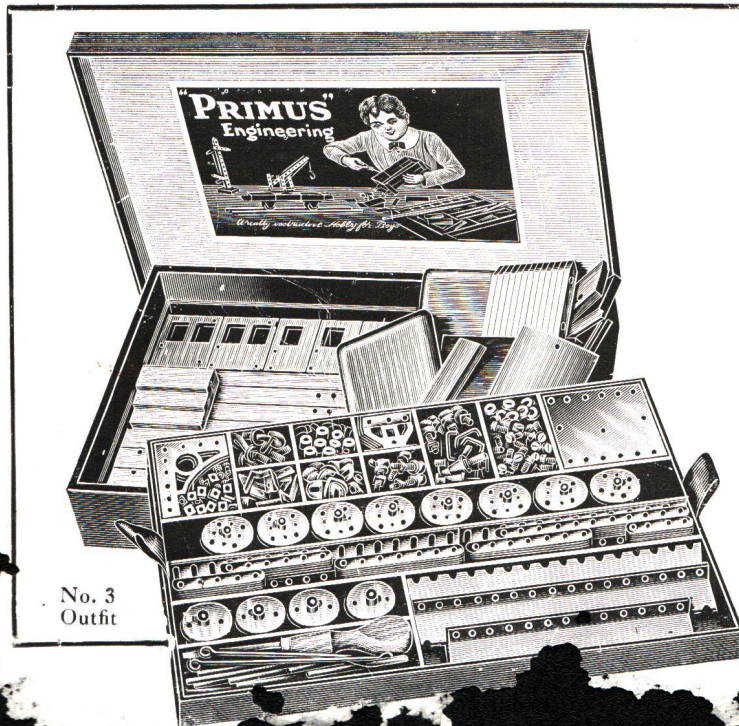
Models made with **PRIMUS BIG-WHEEL & N° 5** standard outfit

No. 1024—

LAXEY WHEEL
(12in. Wheel)

No. 1025—

MONO RAILWAY



No. 3
Outfit

PRIMUS ENGINEERING

THE BRITISH TOY FOR THE BRITISH BOY

PRIMUS is the one toy of which a boy never tires - he advances from box to box, each of which, on account of its wide selection of parts, opens out new possibilities in the way of model making. Here is the

— LIST OF OUTFITS —

No. 0. Contains 92 Wood and Metal parts

No. 1. Contains 140 Wood and Metal parts

No. 2. Contains 267 Wood and Metal parts

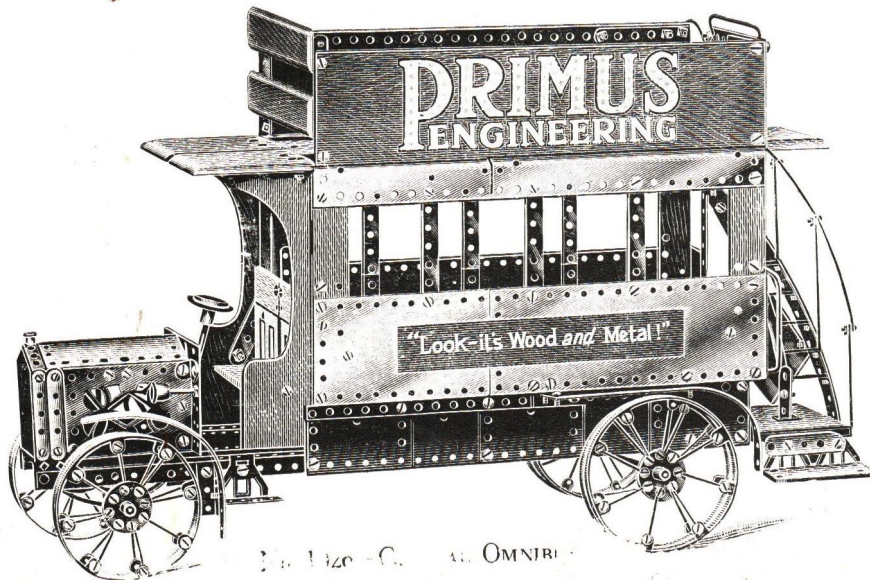
No. 6. Presentation Cabinet, polished, with lock and key

No. 3. Contains 473 Wood and Metal parts, in tray box (as illustrated)

No. 4. Contains 649 Wood and Metal parts, in tray box

No. 5. Contains 1131 Wood and Metal parts, in tray box

Built with
PRIMUS EN-
GINEERING
:: and ::
THE BIG
WHEEL
OUTFIT



Look how real-
istically the
wood and metal
parts make up,
and how like the
real thing the
wheels are

Primus Co. Ltd. OMNIBUS